

Notice of Allowability

Application No.

10/618,909

Examiner

Ling-Siu Choi

Applicant(s)

ZHOU ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 09/02/2005.
2. ☒ The allowed claim(s) is/are 1-64.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This Office Action is in response to the Amendment B filed September 2, 2005. Claims 1-64 are now pending.

Allowable Subject Matter

2. Claims 1-64 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Zhou (US 6,740,615 B2) and Heidemann et al. (US 6,528,683).

An intermediate precursor composition comprising	
A	a plurality of a catalyst atoms - at least one member selected from the group comprising noble metals, rare earth metals, and transition metals
B	a control agent molecule - a plurality of complexing molecules selected from the group comprising polymers, oligomers, and organic compounds, wherein the control agent has a plurality of functional groups disposed along a backbone for complexing the catalyst atoms to the control agent
wherein	
(a) at least about 50% of the complexing molecules is straight-chain and	
(b) at least a portion of the complexing molecules forming a catalyst complex between the catalyst atoms and the complexing molecules	
(c) the catalyst complex being capable of forming a supported reactive catalyst comprising a	

support and a plurality of reactive catalyst complexes dispersed on the support in such a way that a preponderance of the catalyst atoms on an upper surface of the supported reactive catalyst have **a nearest neighbor coordination number of 2**

(summary of claim 1)

Zhou discloses an intermediate obtained by contacting a dried and calcined noble metal catalyst on a support with an organo-metallic complex forming agent, which breaks down the noble metal particle clusters and relocates the resulting smaller metal in the organo-metallic complex forming agent, wherein the noble metal catalyst comprises at least one of palladium, platinum, gold, iridium, osmium, rhodium, and ruthenium and the organo-metallic complex forming agent comprises at least one of citric acid, succinic acid, glycine, salicylic acid, and glycolic acid (claims 1, 11, 15, 21, and 22). In view of US 6,746,597 to Zhou et al., the intermediate does not have a nearest neighbor coordination number of 2.

Heidemann et al. disclose a catalyst consisting essentially of a carrier core and catalytically active metal oxides, which is obtained by spraying an aqueous active material suspension at relatively high temperatures onto the carrier core material at 50-450°C, wherein the aqueous active material suspension contains the active metal oxide such as titanium oxide and a binder which is a polymer comprising 5-100 wt% of ethylenically unsaturated acid anhydrides or ethylenically unsaturated dicarboxylic acids and 0-95 wt% of monoethylenically unsaturated monomer (col. 3, lines 66-67; col. 4, lines 1-65; claim 1). Heidemann et al. further disclose that the metal oxide comprises zirconium oxide, iron oxide, nickel oxide, iridium oxide, cerium oxide, and alkali metal oxide (col. 8, lines 41-67; col. 9, lines 1-5). However, Heidemann et al. do not teach or fairly suggest the claimed intermediate because it is obtained by the contact of

Art Unit: 1713

metal atom instead of metal oxide with the control agent.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



**LING-SUI CHOI
PRIMARY EXAMINER**

November 22, 2005